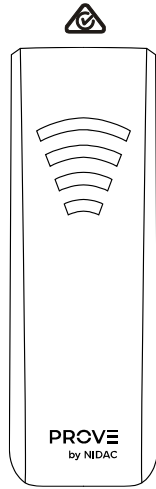# PROVE®
BDF-62R

Dual Frequency Card Reader

PROVE
by NIDAC

FEATURES

- Compatible with all NIDAC Presco and Prescient controllers
- Outputs Presco and Wiegand data
- Site code read from EM cards in Wiegand mode is compatible with generic EM Wiegand prox readers
- Reads HID 125kHz cards
- Reads Mifare Classic S50 CSNs
- Suitable for indoor or outdoor use
- Audible and visual (buzzer & LED) feedback for each card read
- 12-24V DC operation
- Operating temperature range of -20ºC to 70ºC
- 5 year manufacturer's warranty
- Tested to IP65

IMPORTANT NOTICES FOR PRODUCT

- Note that the default reading behaviour will preferentially read LF credentials over HF when both are presented at the same time
- Standard 26 & 37 bit HID cards can be read, other HID formats will read but the output of some cards may not match that of an HID reader.

INSTALLATION

1. Use the mounting plate to mark the installation location
2. Install the mounting plate using at least one screw in each of the top and bottom slots on the mounting plate
3. Attach cable plug and then slide the BDF-62R into place
4. Insert one of the supplied counter-sunk M3 Phillips head or allen key screws to secure the keypad to the mounting plate

SPECIFICATIONS

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Voltage:	9V to 28V D.C.
Current:	200mA max.
Operating Temp:	-20°C to 70°C.
Weight:	BDF-62R: 120g
Dimensions:	BDF-62R: 45mm (W) x 136mm (H) x 25mm (D)
Read Range:	LF: Up to 20cm (8"). HF: Up to 2cm.
Prox Output:	Presco DTA or Wiegand.
Wiegand Output:	Pulse width = 50µs, pulse separation = 2ms.
Wiring Distance:	BDF-62R to Presco PAC or Prescient controller = 1km using unshielded cable, 100Ω max. return resistance on DTA line. To achieve distances greater than 100m the BDF-62R may require a separate local power supply depending upon the thickness of the cable used.

BDF-62R to Wiegand controller, shielded cable must be used.

Wire Gauge	Distance	Wire Gauge	Distance
22 AWG	150m (490 ft)	26 AWG	60m (195 ft)
24 AWG	100m (330 ft)	28 AWG	40m (130 ft)

WIRES

There are 8 wires for the BDF-62R, not all will be needed for each installation. The unused wires should always be terminated and left unconnected.

|	
Black	0V (Ground).
Red	+12V D.C.
White	DTA (Presco data line) or D1 (Wiegand Data 1).
Green	D0 (Wiegand Data 0).
Blue	Blue LED control wire, +2.5V to +28V active.
Yellow	Blue LED control wire, 0V to 2V active.
Brown	Buzzer control wire, 0V to 2V active.
Orange	Tamper / open collector output

BDF-62R TO PAC1 / PAC2
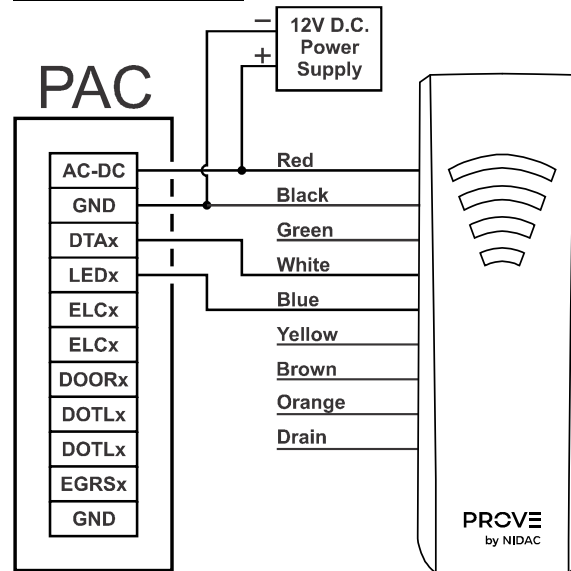
USING THE BDF-62R WITH WIEGAND

The BDF-62R can be used with any standard Wiegand and most non-standard Wiegand controllers.

BDF-62R TO WIEGAND
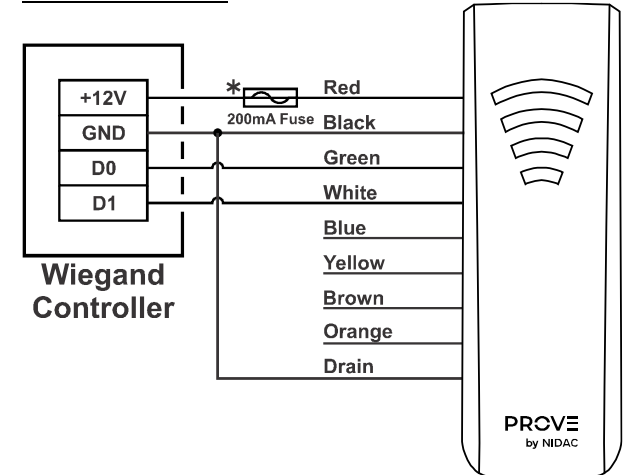
To change the status LED colour from violet to green apply a negative signal (0 to 2V) to the Yellow wire or a positive signal (2.5 to 28V) to the Blue wire.

To sound the buzzer, apply a negative signal (0 to 2V) to the Brown wire.

* If a fused output for readers is not provided use a 200mA inline fuse to protect the power supply from short circuiting if BDF-R wires are tampered with.

BDF-62R OPTIONS

There are several options that can be set to alter the way in which the BDF-62R behaves. These options fall into the 3 categories of General, Presco and Wiegand EM Card Proximity Reader, all of these are explained below.

General Options

These options set the functionality of the BDF-62R independent of whether it is in Wiegand or Presco mode and the HF & LF global reader options.

Memory	Function	Default
005	Force Presco or Wiegand mode [1]	255
080	LF & HF Read Options [2]	10
081	HF Mifare Classic CSN Wiegand read option [3]	10

(1) - Force Presco or Wiegand mode   [Memory 005]
101 = Always in Presco mode.
202 = Always in Wiegand mode.
All other values = Mode auto detected using white wire.

(2) – LF & HF Read Options   [Memory 080]
Allows manual control over LF and HF read functionality.
101 = Read LF credentials only.
121 = Read HF credentials only.
All other values = Transmit code for first detected credential and do not send code for other credential until the first detected credential has been removed.

(3) – HF Mifare Classic CSN Wiegand read option   [Memory 081]
Allows designation of total size of CSN to be read and transmitted as Wiegand.
131 = Transmit lowest 3 bytes as Wiegand 26-bit
232 = Transmit all bytes as raw data with no parity bits
All other values = Transmit lowest 4 bytes as raw 32-bit data (no parity bits)

Presco Options

These options set how the BDF-62R operates when in Presco mode. It is unlikely that these options will need to be changed.

Memory	Function	Default
012	Presco proximity reader output format (standard or KC compatible) [4]	255

(4) - Presco proximity reader output format (standard PAC format or KC compatible) [Memory 012]

101 = Presco output from the prox reader is 7 digit KC compatible as per a PIM Wiegand to Presco conversion (only works for 26 bit Wiegand cards).

202 = Presco output from the prox reader is 7 digit KC compatible using the lowest 7 digits of the 9 digit Presco PAC code.

All other values = Presco output from RFID is standard 9 digit PAC format.

Wiegand EM Card Proximity Reader Options

These options set the format of the Wiegand data sent by the BDF-62R when it is in Wiegand mode and an EM RFID card or tag is being read.

Memory	Function	Default
060	26 bit Wiegand EM card site code byte to use [5]	255
061	EM card custom Wiegand format [6]	255
062	Number of bits in EM card site code [7]	8
063	Number of bits in EM card user code [7]	16
064	Number of bits for EM card start parity calculation [8]	255
065	Number of bits for EM card end parity calculation [8]	255
066	EM card parity polarity [9]	2
067	Data start bit from EM card for site code [10]	1
068	Data start bit from EM card for user code [10]	25

(5) - 26 bit Wiegand EM card site code byte to use [Memory 060]

121 = Presco reader site code byte used.

202 = Alternate site code byte 2 used.

All other values = Generic EM reader compatible site code byte used.

(6) - EM card custom Wiegand format [Memory 061]

101 = 34 bit Wiegand (16 bit site code, 16 bit user code, even start & odd end parity bits for 16 data bits each) using Presco data.

121 = 34 bit Wiegand as above using alternate site code data bytes.

202 = Custom Wiegand format as defined by memories 62 to 68.

All other values = Standard 26 bit Wiegand.

(7) - Number of bits in EM card site/ user code [Memories 062 & 063]

A maximum of 40 data bits can be set as a sum of these 2 memories. If the sum exceeds 40 then the number of site code bits will be automatically reduced.

(8) - Number of bits for parity calculation [Memories 064 & 065]

Number of bits for parity calculation (0 = no parity bit, if the value is greater than the total number of data bits (site code + user code bits) then it will use half the total number of bits, for an odd number of bits the end parity will use 1 more bit).

(9) - Parity polarity [Memory 066]

0 = Start parity is Even, End parity is Even.

1 = Start parity is Odd, End parity is Even.

2 = Start parity is Even, End parity is Odd (default value).

3 = Start parity is Odd, End parity is Odd.

**(10) - Data start bit from EM card** [Memories 067 & 068]

There are 40 bits of data in an EM card organised as D00-D03, D10-D13, D20-D23, D30-D33, D40-D43, D50-D53, D60-D63, D70-D73, D80-D83 and D90-D93. Bit D00 is referred to as bit 1 for this memory and bit D93 as bit 40.

Ensure that when setting the start bit that there are enough bits after the start bit for the number of bits set for the site or user code data.

SETTING OPTIONS VIA A PROVE KEYPAD

To set any of the options the BDF-62R needs to be placed into option setting mode and a Prove keypad is required to be connected to the BDF-62R, as per the steps and diagrams below.

1. Remove power from the BDF-62R

2. Connect the green wire to the white wire on the BDF-62R and connect a resistor between the white wire on the Prove keypad and +12V DC. (If using a Prove keypad that requires external power remember to connect the red wire to +12V DC)
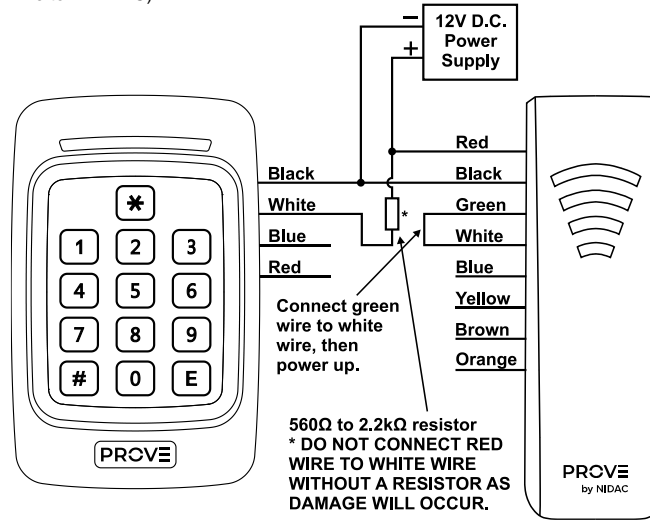
3. Reapply power

4. Once the LEDs on the BDF-62R start to double flash blue you are in option setting mode

5. On the BDF-62R disconnect the green wire from the white and then connect the white wire to the white wire of the Prove keypad as per the diagram below
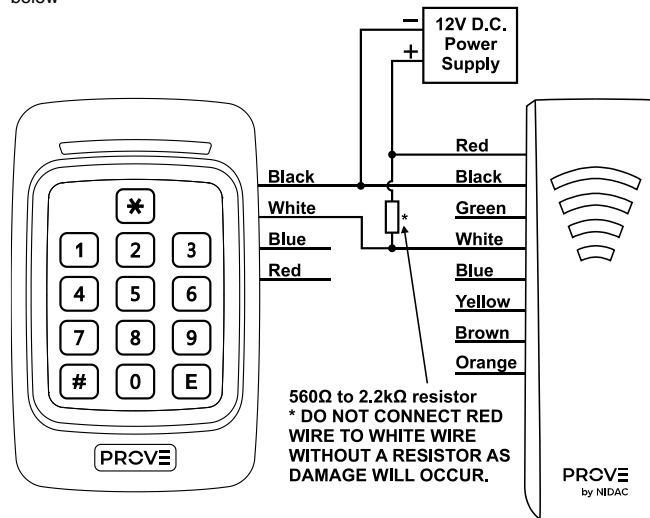
6. The BDF-62R will remain in option setting mode for 5 minutes from the last option setting sequence attempted

Setting an option memory value

[*] <3 digit memory number> <1 to 3 digit value> [E].

Reset all option memories to factory defaults

[*] [9] [8] [7] [6] [5] [4] [E] whilst in option setting mode.

Exit Option Setting Mode

[*] [9] [9] [9] [E], wait 5 minutes after last option setting attempt or cycle power.

NOTE: Remember to disconnect the white wire from the green so that the unit will not start up in option setting mode after a power cycle.

Set BDF-62R to read same EM card site code as older Presco readers

[*] [0] [6] [0] [1] [2] [1] [E]

WARRANTY

NIDAC Pty Ltd will repair or replace this product if proven to be faulty (excluding accidental or malicious damage) under the 5 year warranty offered from the date of purchase.

As NIDAC Pty Ltd or its agents do not perform the final installation, inspection or training in the use of this product, they cannot be held liable for injury, loss or damage directly or consequentially arising from the use or misuse of this product.